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Abstract

The present invention belongs to the field of fine chemical engineering. The preparation process to rutile phase nano titanium dioxide includes the steps of preparing mixed solution of $TiCl_3$ and $TiCl_4$ in the concentration ratio of 1/30 to 1 as the initial material, heating hydrolysis, aging, depositing and inorganic carbonate washing to eliminate Cl ion and drying. The present rutile phase powder has crystal size of 6-10 nm and grain size of 100-500. When the $TiCl_3$ to $TiCl_4$ concentration ratio is 1:1, all the powder is spherical rutile phase; and when it is 1/30, all the powder is needle rutile phase. The said process has the outstanding features of no heat treatment of the powder, large specific surface area of the powder and being suitable for large-scale production.

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